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TITLE : VACUUM HEAT INSULATING PANEL INSERTION TYPE BOX BODY FOR REFRIGERATOR/FREEZER

ABSTRACT : PROBLEM TO BE SOLVED: To provide a highly strong heat insulated box body, in which reduction in urethane foam filling quantity and in weight, improvement of compression strength and of a size stability, stabilization of a long-term heat leakage quantity can be accomplished, for an energy-savable refrigerator/freezer body avoiding use of CFC or HCFC serving as a foaming agent, using a cyclopentane-wixure system with an ozone layer destruction coefficient of zero as a substitute for CFC and HCFC, filling an outer box inside face side with a vacuum heat insulating panel, and filling a clearance part with rigid urethane foam.

SOLUTION: In a thermally insulted box body, a cabinet wall internal space between an outer box and an inner box of a refrigerator/freezer is filled with a vacuum heat insulating panel, in which an opened cellular structure polyurethane core material and a getter agent are covered with a gas barrier material and the inside of the covered body is evacuated and sealed, and polyurethane foam using a cyclopentane-water mixture foaming agent is filled therein. Using urethane material providing a whole skin layer density of 34-37 kg/m^3, a compression strength of 0.1 Mpa or more, and a bending strength of 0.4 Mpa or more for a rigid urethane foam skin layer apart from the urethane injection port by at least 500 mm or more, the cabinet wall internal space is actually filled with insulating material so that a ratio of the insulating material to the space becomes 30-35 g/l.